**The
Practical Winery
3811 Clair Dr.
Carmichael, Ca.
95608**

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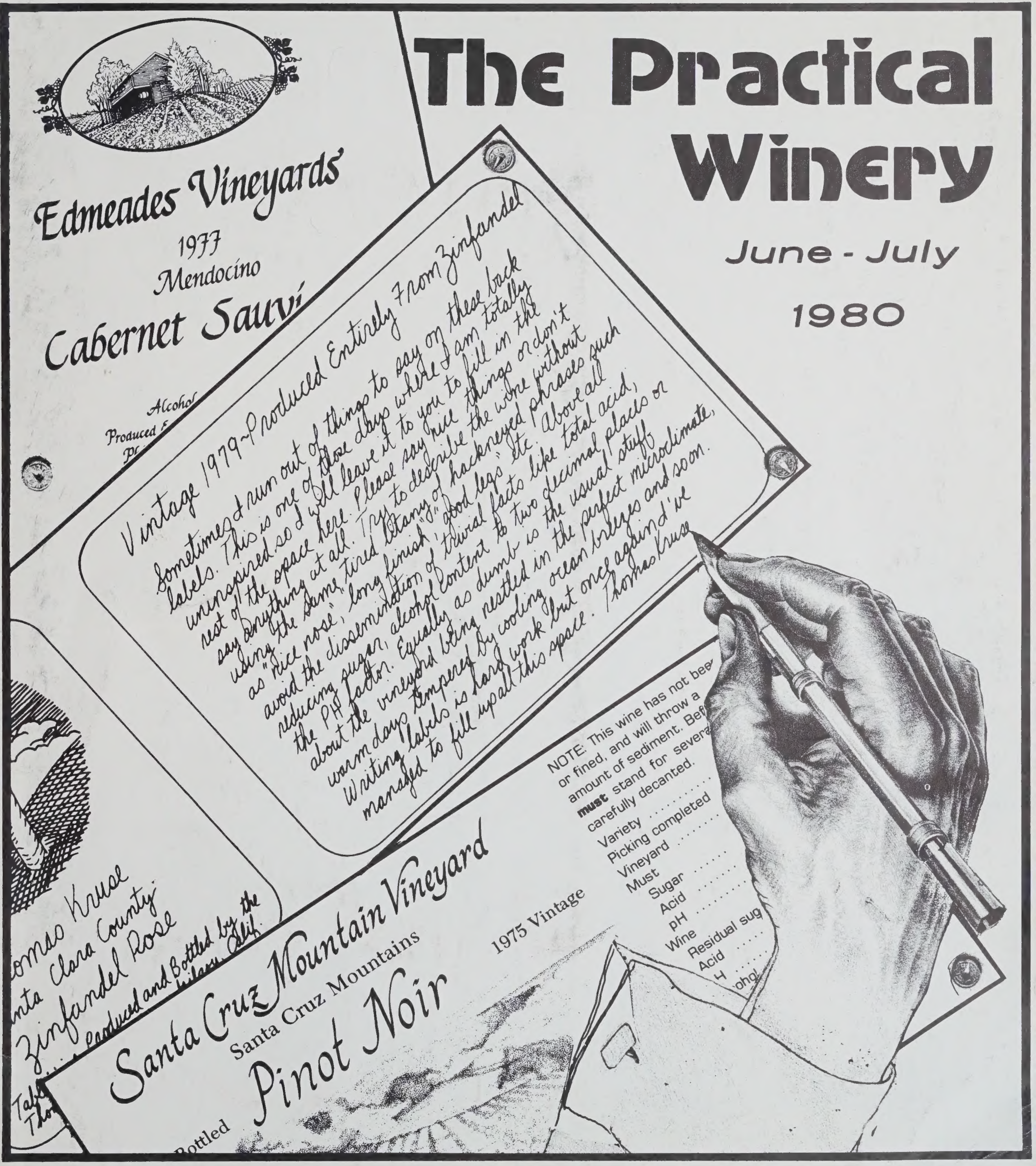
The Practical Winery

June - July

1980



Vintage 1979~Produced Entirely From Zinfandel

Sometimes I run out of things to say on these back labels. This is one of those days where I am totally uninspired so I will leave it to you to fill in the rest of the space here. Please say nice things or don't say anything at all. Try to describe the wine without using "the Same tired litany of hackneyed phrases such as "nice nose", long finish", good legs" etc. Above all avoid the dissemination of trivial facts like total acid, reducing sugar, alcohol content to two decimal places or the PH factor. Equally as dumb is the usual stuff about the vineyard being nestled in the perfect microclimate, warm days tempered by cooling ocean breezes and so on. Writing labels is hard work but once again I've managed to fill up all this space. Thomas Kruse

The Practical Winery

THE PRODUCERS' ADVOCATE

June-July 1980
Volume 1, No.2

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The Practical Winery is published bi-monthly by Tony Norskog & Friends. Editorial and business office: 3811 Clair Dr. Carmichael, Ca. 95608, (916) 944-1599. Subscription rates: $20/year. Outside the United States, please add $4/year

Cover; Montage of three lables. Interviewed are the three winemakers, Jed Steel, Ken Burnap and Tom Kruse.

Letters

Dear Sirs: The "information exchange" notion is worth a $20 bet.

You say you are open to suggestions. Some of your stories could be more expository. For example, I could neither build nor buy the parts for the Dejuicer if your story were my only source. As we are not in the Napa Valley, we cannot go ask our neighbor. My nearest wine grower neighbor is 25 miles away. This part of New York is a different climate in more ways than one.

I am looking forward to some answers about filtration......

Sincerely,
George W. Naumburg, Jr., M.D.
North Salem Vineyard, Inc.

Dear Dr. Naumburg: I do thank you for your input. I presented the article in question to two machine shops, neither of which deal with the wine industry, and both said they could build it given the dimensions. The real question is; do you need it? This can only be answered given the amount and style of wine to be produced.

This and the other tools and practices addressed here are presented with a bare bones approach in the intrest of brevity. Given the principle, I leave it in your hands to determine its value to your situation and method of execution.

Operating in a lesser developed wine region you and many other subscribers enjoy the mixed blessing of less local wine technology, as well as less local competition for wine sales. I hope this publication can help close the information gap.

Good luck,
Tony Norskog

Tony Norskog

Dear Mr. Norskog:
You guys are something else! Finally someone who writes in my language. This is the most practical publication for the small winery that I have ever read. Remember, there are also wineries outside of California, i.e. the East. We have almost 40 in Ohio, and most of those are small. Keep up the good work.

Thomas W. Wykoff
Cedar Hill Wine Co., Ohio

Dear Tony:
.... Ithink it's somewhat ironic that the world's most impractical winery (all those stairs, operations spread all over the place) was chosen for the cover of a publication called The Practical Winery. (1st issue)

Josh Jensen
Calera Wine Company, California

Content of your magazine is very interesting. I like it. Looking forward to recieving the next issue.

Frick Winery, California.

Dear Editor:

If future issues of the Practical Winery are as informative as Vol.1 No.1 you'll have us as lifetime subscribers. Keep up the good work!

Marianne Eddins
Perdido Vineyards, Alabama.

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Jed Steele, winemaker at Edmeades Vineyards with Shelley DuPratt, grower of one of Mendocino's finest Zinfandels.

P.W. Why the use of all the proprietary names such as Rain Wine, Opal, Whale Wine, and Queen Ann's Lace?

Jed Steel: It started with Rain Wine; we didn't want to call our white wine by some generic name and we are the rainiest viticultural area of California, an average of about 46" This year it has been about 53" so far. In the fall when St. Helena will get ½" or so we will get 2½", so it's something we really have to recognize the importance of. Queen Ann's Lace is a wild flower in the vineyard; I thought it was a great name for our generic red, too bad it's a white flower. You know it's funny, we started with the rain wine, and we happened to make the first Ice Wine, so it seems we may be playing games with the names.

P.W. The Ice Wine was an accident, wasn't it?

J.S. Yes, we were just going to make a late harvest French Columbard, and then it froze. It was about 18°F when we started to pick, and it was already about 50% Botritus.

P.W. It must have been a real pain to pick.

J.S. It was a real hassle. People say why dont you do it again, but it doesn't inspire a lot of wanting to do it again type thing. It was cold, the tractor wouldn't start, it was starting to snow, the pickers wanted to go home, we paid a little more and they did it.

P.W. With all this rain the soil must leach out quite a bit.

J.S. Yes the soils are real low pH. None over 6, some even 4.5 and like that.

P.W. How does that affect the wine?

J.S. I don't know; It makes it hard to get the vines started and up the stake. Once up the stakes they seem to do fine. I've heard that real low pH's give a lot of available aluminum, but here there's boron and zinc deficiency too. It's not great soil.

P.W. What varities do you think are distinguishing themselves here?

J.S. Well, Cabernet, right here on the valley floor has done real well. People don't want to hear that, but it's true. This valley is real different, Booneville grapes mature 10 days earlier than here, just 10 miles away. People plant a lot of Gewurtz because of this rap about cold climate grapes but the most memorable wines for me have been the Cabernets, also the Zinfandels from the ridge tops, but thats another climate up there.

P.W. A lot of vintage variation?

J.S. Definitely, thats why it's real hard to tell someone what to plant. for instance we had an estate Bottled Cabernet in '74, '75, '78, and '79, but we have to bite the bullet in the other years. I've been getting better about working with those wines that come in at 21°brix.

P.W. Hows that?

J.S. We ferment them as hot as we can get them. Otherwise they can be real light, though color has never been a problem. But if you ferment these high acid, low sugar grapes at 95^{o}F or atleast 90^{o}F then you seem to get more extract, the wines taste richer.

P.W. How do you handle the high acids?

J.S. It's never been a problem in the Cabernet. The problem has been with the Zinfandel. If it comes in over one (acid) then a malo-lactic fermentation may drop it to only .8 which you can adjust with calcium carbonate. Thats not so much of a problem, but if the pH is 3.1 or 3.2 then sometimes you have to raise it to 3.3 to get the malo-lactic going. This you do right after pressing as that's the first time you can get an accurate measure of the volume.

P.W. Are you inoculating for M-L?

J.S. No, and the M-L fermentations are very drawn out, but the wines come out quite clean. No H_2S problems, but next year we may try for a malo-lactic fermentation in the Chardonnay and I think we'll have to inoculate because there's no culture in the white cooperage.

In the tasting room many awards a are on display attesting to Jed's abilities. He has all but promised to write an article for us on Wine Deacidification, the subject which earned him his masters degree from U.C. Davis in 1976.

The winery, partially indoors and partially out was founded in 1972 Edmeades Vineyardd is located about 10 miles from the coast, west of Philo.

P.W. I know with your dry wines you filter little if at all, but as a worst case how would you clean up a late harvest wine?

J.S. For the sweet wines, since we don't have a centrifuge, we usually chill it, fine with bentonite, then run it through a Scott 11250 which is a real loose pad. Then we get it, hopefully, depending on how clear it gets, to go through a K10. When it's time to bottle it goes through an EK and a membrane in series. I've noticed and other winemakers have said that if you EK into a tank, then wait a couple of days, and try to membrane filter, something has happened in the wine. Maybe some sort of colloid equlibrium or something but that will cut the life of the membrane.

I was playing sort of a game and put 3,500 cases of rain wine, and 500cases of gewurtz through a 10" membrane cartridge. I finally threw it away because it had been in SO_2 and water so many days it started to smell funny, but it still bubble pointed fine. To put it through a pad and a membrane in series is really the only way to go.

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Ken Burnap (left) winemaker of Santa Cruz Mountain Vineyards and Jeff Booth standing on Rider Ridge.

Practical Winery: What do you think makes a great Pinot Noir grape?

Ken Burnap: I did about three and a half years of research to determine where Pinot Noir should be grown and what I did was go to the premieur grand cru vineyards in Burgundy, and look for what they have, what's it like? What I wound up with was 13 identtifying things from the different vineyards, and what you do is try and correlate them, and there's nothing that fits, no streak that runs through them all. Every time you think you have identified a necessary element you find a fabulous vineyard which doesn't have it. So what I wound up with was 13 items, none of which were in all vineyards, but some would overlay from one vineyard to another and one of those was limestome. Now, not all great vineyards have limestone, Chambertain comes to mind, Clos de Beze...

P.W. Do you have any limestone in your vineyard?

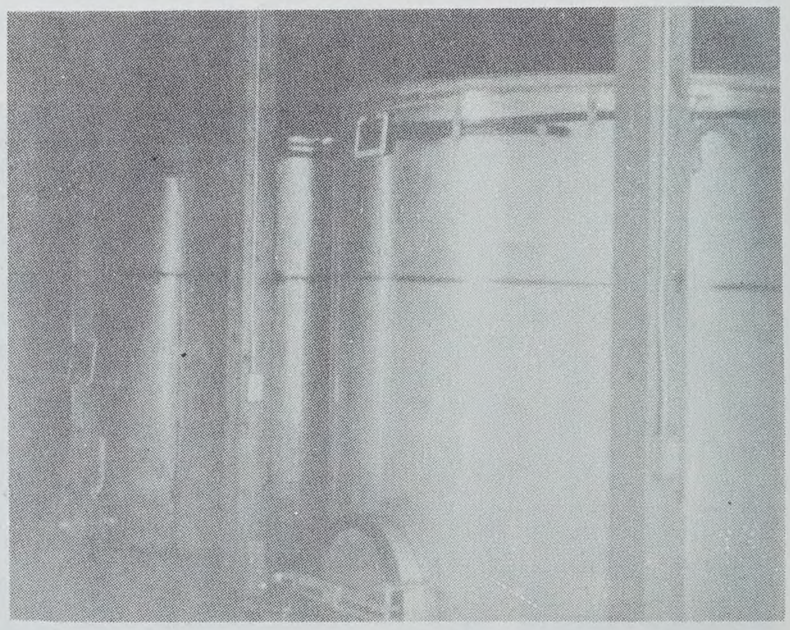
K.B. There are two areas where you can find limestone, but basically most of my deacidifying soil elements come from old fossilized sea shells and prehistoric marine sediment. We often turn up old sea shells when we disk. But to summarize I don't think it's very important; my favorite Burgundies come from vineyards with no limestone, red soils, like Chambertain for instance.

P.W. Do you watch your Pinot Noir pH's very closely?

K.B. I pick to acid and pH, I don't watch the sugar much; thats one reason I have long M-L's,. I pick at very high acids, but this wine (1977) has 14.6 alcohol which might also help account for the M-L duration.

P.W. How well do these heating coils work? (pointing to some heating coils taped to the bottom of the enclosed tanks)

K.B. I tried to keep the wines at 20°C to try and promote a natural malo-lactic, but I've done this three years now and it never worked. I get a natural M-L extensively drawn out, often about one year in barrel.



Note the soaker hose taped near the top of the tank, at harvest a bed sheet is hung from the rope above the hose and water (1.5gal/hr) is trickeled over for evaporative cooling which Ken says is adequate to control the higher temperatures of red fermentations.

P.W. The Cabernet also?

K.B. Yes.

P.W. Why do you think it's so long?

K.B. It's just the bacteria I have here. It's not one of those speedy cultured types; I don't use cultured yeast in the fermentation either, it's the natural yeast of our vineyard.

P.W. What kind of sulfur program are you using?

K.B. We didn't use any on the Pinot this last year; in '76 I added 25ppm at crush. If the grapes are too hot, I add 25 ppm, no more than that, to kill anything that might get active too fast on me. When you don't use any refrigeration you have to learn to do other things; like if the grapes are too hot we wait till the next morning to crush them, when they are cool.

P.W. Are you using any SO_2 in the cellaring or bottling?

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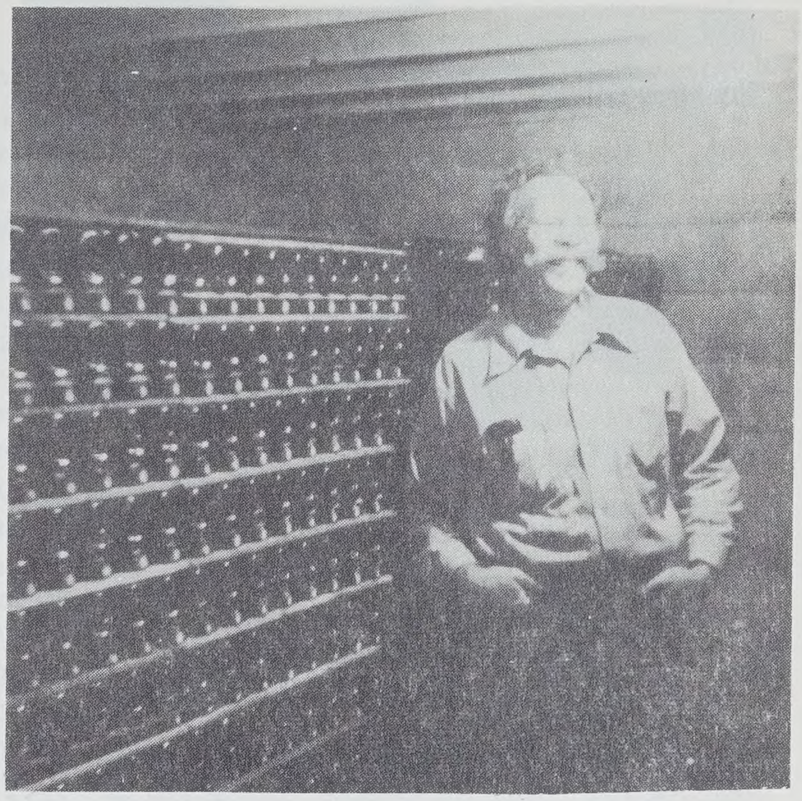
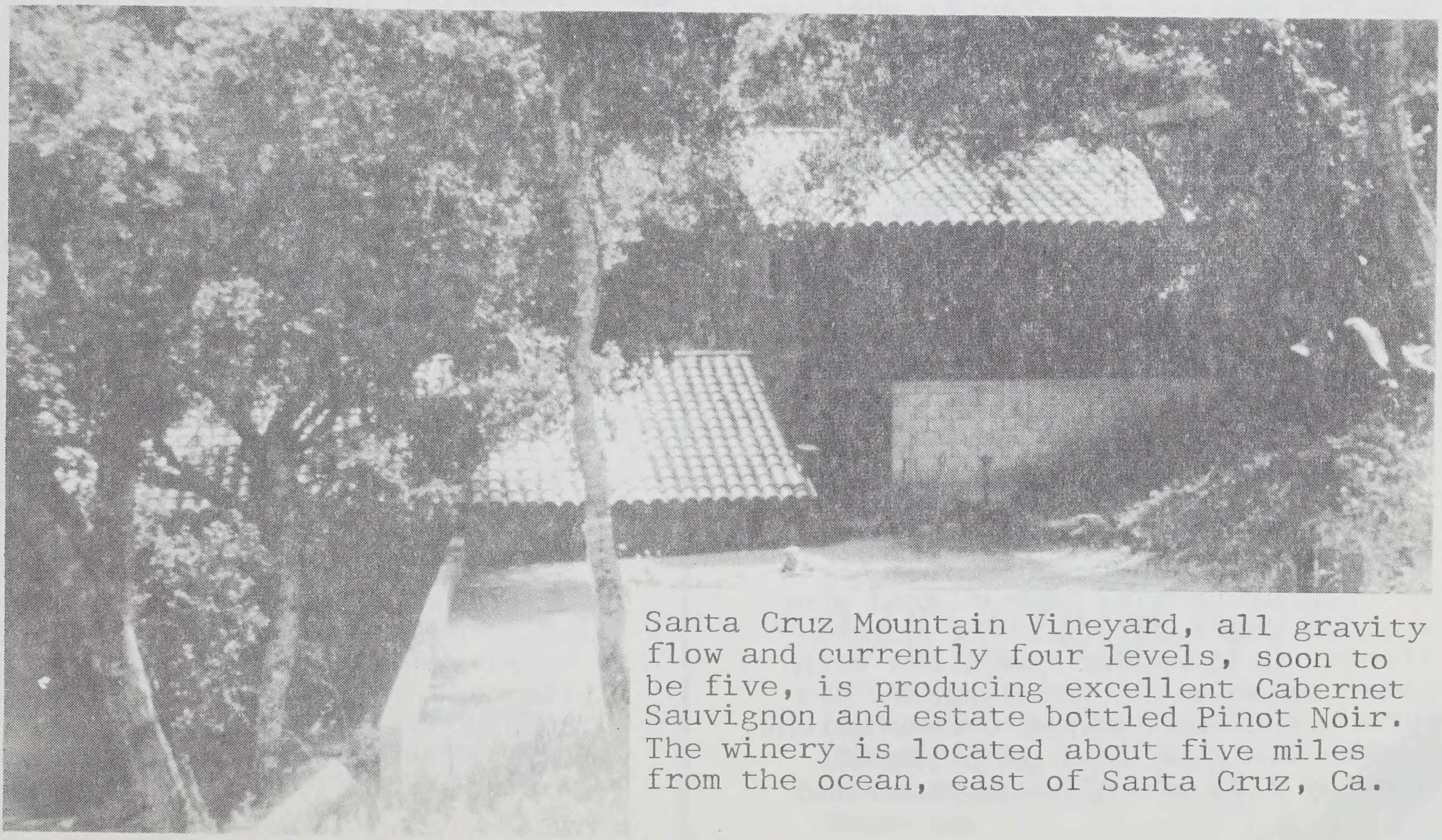


Ken Burnap, former Atomic Energy Commision photographer (he took some of those great Alamo bomb test pictures), restaurateur, and now proprietor of Santa Cruz Mountain Vineyard stands here in front of his 1977 Pinot Noir, bottled and binned in late '79, early '80.



Santa Cruz Mountain Vineyard, all gravity flow and currently four levels, soon to be five, is producing excellent Cabernet Sauvignon and estate bottled Pinot Noir. The winery is located about five miles from the ocean, east of Santa Cruz, Ca.

Thomas Kruse holding a 'U' tube racking rod he says is so simple many people overlook it. A man of many interests he is, at press time, running for a seat in the state assembly, 24th district.

I include these reflections of Tom Kruse not because he has an unusual or idealistic winery (it's a rather eclectic affair), nor because his wines fetch top dollar (they are generally quite good and fairly priced as well), but pay him this respect for his approach to life and the way his winery has become a reflection of his ideals.

The wine industry is hard work, and the smaller the winery, the more work it is. The sole owner-operator winery finds that person wearing a multitude of hats, winemaker, marketing man, administrator, accountant, maintenance man, etc. In this rush we can be blinded by the money problems, science, obligations, and forget the pleasure that making wine can offer.

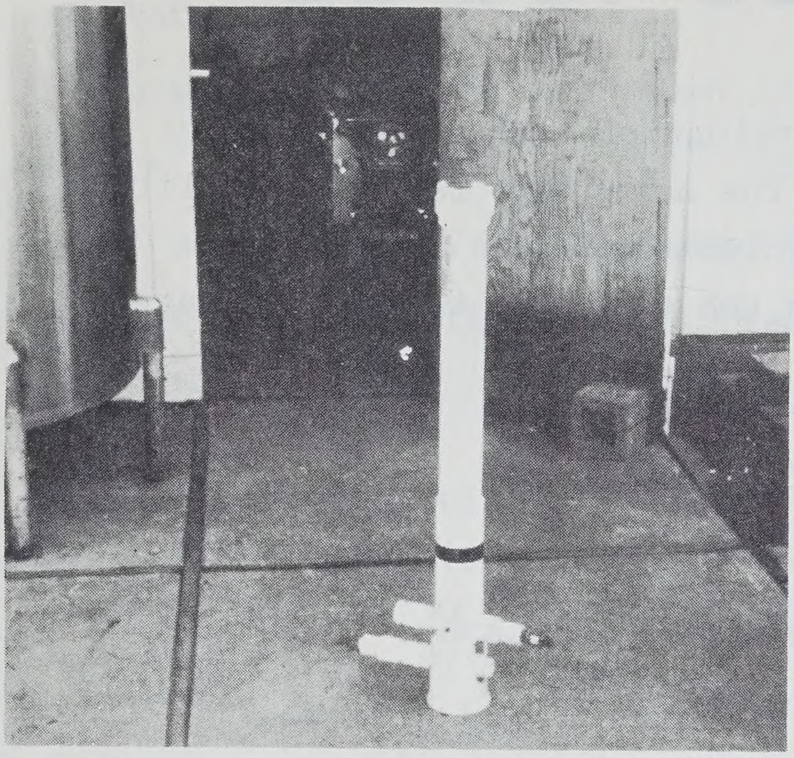
Tom Kruse is too generous to be a captain of industry; his winery recently showed a small profit after nine years, but he enjoys his time spent, and seems to enjoy the flow of visitors. In addition he finds time to be locally active, contributing and participating in local festivals and public office.

On winemaking Tom offered some unusual and some practical suggestions. He does not inoculate with yeast or malo-lactic cultures, preferring the spontaneous fermentations. "I even did some lots of Zinfandel side by side of cultured yeast and natural yeast and the cultured yeast didn't have the character and had more H_2S problems", said Tom.

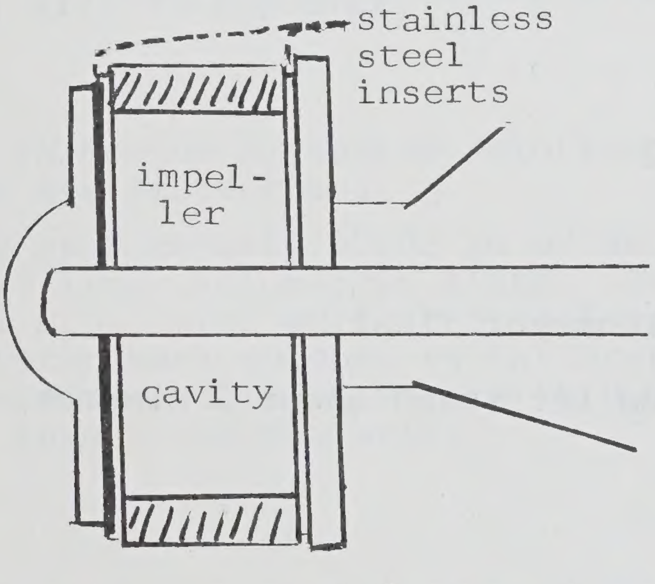
Tom has been making Champagnes for all nine years with some antique corking and capsuling equipment. He pointed to the equipment and said "Those and my grandfathers shotgun are things I wouldn't part with". For degorgment, Tom chills the champagne bottles overnight in a chest freezer and freezes the neck of the bottle with dry ice and isopropyl alcohol or acetone.

On filtration Tom has this revelation to share with us; "For nine years I kept saying filters are no good, they must take something out. This year I made more wine than ever, and in order to facilitate that, and to get some wines on the market by the holidays, Sunday night whites, I bought a filter. Now if I waited for a fining agent like bentonite to take its normal course, I would have been bottling in April. I put some white wine with some haze in one side and it came out the other side, crisp, fresh, delightful with two less rackings than normal– what can I say. I had to like it. We even filtered through a loose pad some cabernet, and I found the filtered side had a better aroma.

Thomas Kruse
Santa Clara County
Carignane
Table Wine, Produced and Bottled by the Thomas Kruse Winery, Gilroy, Ca.



Tom is also proud of this cartrige filter adapted from a swimming pool type housing. A regular millipore cartridge (or any other manufacturer) can be used with the correct adapters which they all sell.



The Tom Kruse method for rebuilding a plastic housed Jabsco pump. Tom noted that after a few years of use the plastic housing parts that contact the rubber impeller wear with a grove, such that when the impeller is replaced the pump will still not self prime. Tom picked up some 16 gauge stainless steel sheet and cut holes for the bolts, and the center shaft, sandwiched the sheets on both sides of the impeller and reports that it now works better than new.

Pressure Sensative Labelers

Anyone who has shopped recently for an automatic labeler to replace the semiautomatic one they are currently wrestling with have found a gap in price between the $3,000 semiautomatic equipment, and the $15-20,000 automatic models (which are generally worth the money if you have it). Several manufacturers are now selling a pressure sensative type labeler for an intermediate price, which works well in that the labels go on straight, fast, no warm up time, and the like, but the few people who have them that I have spoken with have the following complaints: the cost per label is higher as they come on a roll of glossy paper and so need special printers to do the printing; among the three or four printers now doing this work the selection of paper is restricted as it takes a substantial investment for them to stock each type of paper; the printing quality has been good to dismal; and the last complaint is that the adhesive on the back of the lables is not water soluble so the bottles cannot be washed, even with superheated steam.

These are all problems which can be straightened out with time and technology, in which case the system will warrant reinspection.

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SO_2 via Iodate-Iodide

This method of free and total SO_2 determination compares favorably to the Ripper determination for accuracy. The advantage is the stability of the iodate solution compared to iodine solutions. The mechinism is as follows; an excess of iodide is added to the wine, it is then titrated with iodate:

$$8I^- + IO_3^- + 6H^+ \text{ —— } 3I_3 + 3H_2O$$
$$I_3^- + SO_2 + H_2O \text{ —— } SO_3 + 3I^- + 2H^+$$

As soon as excess iodine is present, the starch endpoint is visable via color change.

Procedure for Free SO_2

1) Pipet 25 ml of wine into a 250 ml Erlenmeyer flask.
2) add 2 ml of 1:3 H_2SO_4.
3) Add 4 ml Starch Indicator.
4) Titrate with I-IO_3 using a 10 ml burette readable to 0.05 ml .

Calculation:

(ml of titrant used) X 20 = ppm Free SO_2

Procedure for Total SO_2

1) Pipet 25 ml of wine into a 250 ml Erlenmeyer flask.
2) Add 10 ml 1N NaOH, stopper, swirl, and let stand about 5 minutes.
3) Add 2 ml H_2SO_4 1:3 solution.
4) Add 4 ml starch indicator solution.
5) Titrate with I-IO_3 to endpoint, #mls used = n_1
6) Add 40 ml 1N NaOH, stopper, swirl, and let stand about 5 minutes.
7) Add 7 mls H_2SO_4 1:3 solution.
8) Titrate with I-IO_3 to endpoint, # mls used = n_2

Calculation;

$(n_1 + n_2)$ x 20 = ppm Total SO_2

Endpoint detection:

In white wines the end point is a purple which will last about 30 seconds, it will then fade out. The end point in red wines is visible with a strong yellow light source below, or, better yet, yellow light from the side, and flucrescent light from below.

Iodate-Iodide Solution N/128

mix: 0.566 gm KIO_3 (potassium iodate)
0.500 gm Na_2CO_3 (sodium carbonate)
5.000 gm KI (potassium iodide)

dilute to 1 liter, if solution is slightly yellow, add one or two crystals of thiosulfate, till clear.

Sulfuric Acid, 1:3 solution H_2SO_4
(wear eye protection)

To a 1 liter volumetric flask with 300 ml H_2O add 250 ml H_2SO_4 concentrate slowly! Cool in a water bath, fill to top line.

NaOH 1N, Sodium Hydroxide solution
(wear eye protection)

Place approximatly 40.82 gm of NaOH in a 1 liter volumetric flask. Add 50 ml H_2O, swirl well to dissolve. Use water bath to cool to calibration temperature, fill to mark with H_2O, cap, invert and mix well.

Starch Indicator Solution
(lasts about 3 weeks)

Mix 5 gm starch with 25 ml H_2O in a beaker, mix 100 gm plain NaCl with 500 ml boiling H_2O. Add starch mixture to salt solution and boil about 5 min. cool to room temp, dilute to 1 liter. filter to remove sediment if necessary. Turns brown when it's going off.

Interview with Jed Steele
continued from page 5

P.W. Whats in the future for Edmedes Vineyard?

J.S. We're like most wineries, making 75% white, and most of that is like the Rain Wine and Opal, slightly sweet refreshing whites, but the more I make wine the more I want to get into these drier wines. One of our Gerurtztraminers is dry, 13% alcohol, and slightly bitter-great food wine, but we sell a lot of the sweeter wines from the tasting room and that's just the way it is, but I know that in the long run the thing that's going to carry above the trend are the red wines from this area.

Classified

Due to the demand for used equipment these classified advertisements are free to subscribers. They must be submitted by the 15th of the odd months.

FOR SALE:
10 inch continuous screw press, needs restoration
Fortino Winery 408-842-3305

WANTED:
Phase Contrast Microscope, 200-1000x ZD Winery
707-963-5188

EMPLOYMENT
available- Viticulturist, experience in soils & supervision 916-758-5122

A FEW FACTORS INVOLVED IN PROPER DEPTH FILTRATION

The effect of filtration on wine is still a moot point. Fine wines are made with and without it and we will address only technique and equipment in this series of articles.

Depth filtration is used for the removal of large amounts of particulate matter. If that to be removed is not yeast or bacteria, then it is colloidal in nature, and your cellaring techniques prior to filtration become more critical. To remove proteins, pectins, and complex polysaccharides, many of which carry a negative charge, fining to improve settling or aggregation will ease filtration.

Formerly asbestos was popular due to its high zeta potential and ability to remove particles smaller than the rated pore size. The movement away from most applications of asbestos for health reasons has brought about the search for filter media with a zeta potential (an electrokenetic attraction) equal to the naturally high zeta potential of asbestos. When, like asbestos the zeta potential is positive it will attract most of the particles in the feed stream which are negativly charged.

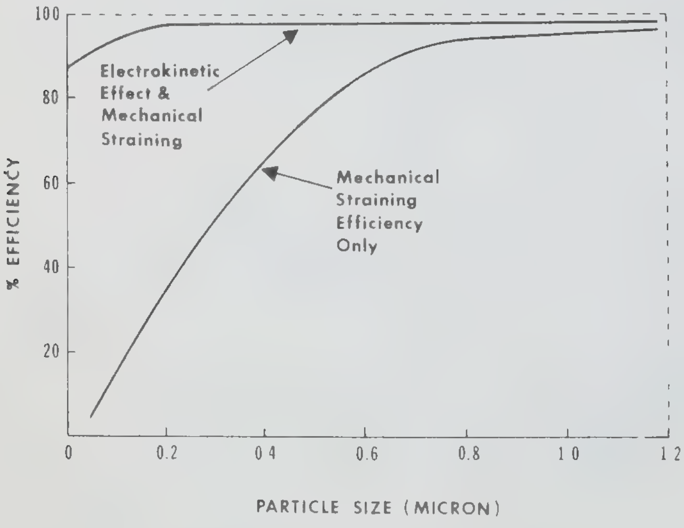
The problem with asbestos substitutes thus far has been that the binders of high zeta filters are not stable at low pH's and some will tend to leach out at pH 3 allowing media migration (the pads break up).

The use of diatomaceous earth and other filter aids continues to increase in popularity due to its ability to filter some of the problem colloids. Small lots of wine can be filtered via the use of pads only, but the larger the amount of wine or the more particulates it carries, the more attractive ecomomically D.E. becomes.

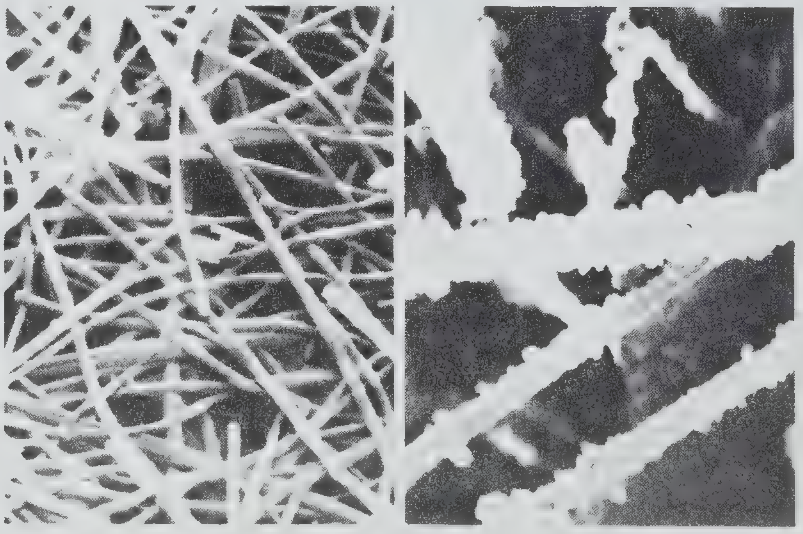
Strategies of Depth Filtration

1) When selecting the proper filter aid particle size: the effecttiveness of filtration increases as the particle size of the filter aid approaches that of the particle to be removed. If the particles to be removed are smaller than the filter aid particles, they will pass through unobstructed. If they are larger they will tend to form a film over the filter aid.

2) Most people I spoke with about filtration mentioned many of the problems they came in contact with came from running the filtration too fast. Several people mentioned that cutting the flow in half would often more than double the throughput. With filter aid filtrations, a minimum speed is needed to keep the cake on the septum (about 1 gallon per square

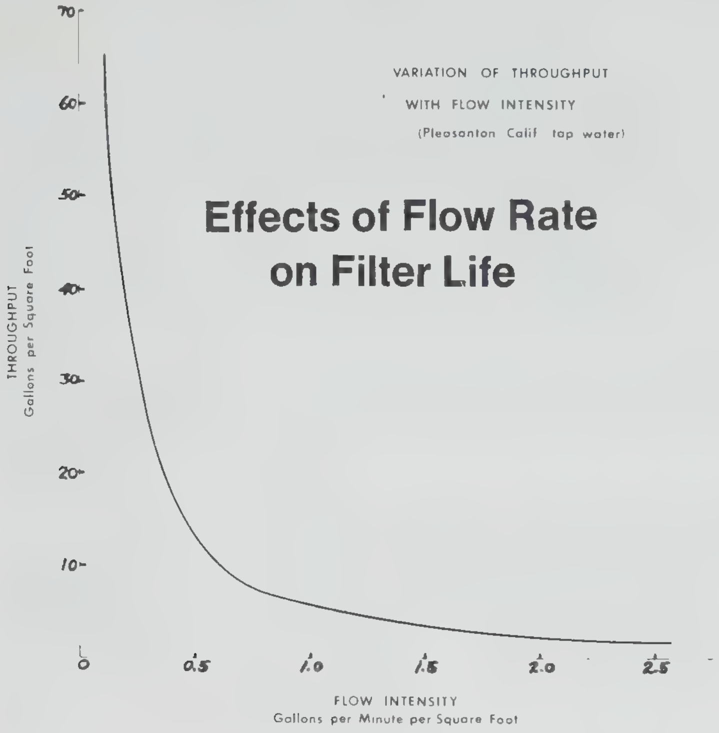


AMF - Cuno



The chart on the left shows filtering efficiency of fibrous mat with and without the effects of zeta potential. On the right fibers are magnified 10.000X and 40,000X to show trapping principle due to size and the effects of trapping via zeta potential respectively.

foot per minute), while a flow rate too fast will cause cake compaction, channeling, reduced residence time, and precoat erosion.

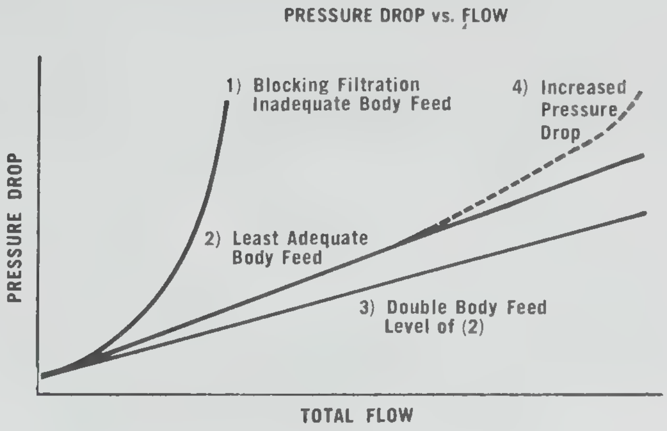


Effects of Flow Rate on Filter Life

3) As the cake builds one must maintain the addition of filter aid, but as the differential pressure across the cake (delta P) increases then the percentage of filter aid must also increase to maintain flow and slow the delta P rise. 0.2-4.0% filter aid to volume is a typical range for variation in filter aid additions. As the filtration proceeds two changes occur to necessitate an increase in filter aid percentage:

a. The thickness of the cake is increasing, thus the compressability will be greater, and the delta P across the filter media will increase. An increase of filter aid use at this point will aid in keeping a loose cake and prolong the filtration.

b. One should always filter from the top of the tank down, with the more common situation being one where the operator changes from an upper racking valve to a lower one, or the swing arm, which is becoming popular, is rotated down with the result being an increase of solids. With this an increase in filter aid percentage is needed to maintain a porous cake, and avoid blinding off areas of the filter, channeling, and increased delta P, thus prolong throughput.



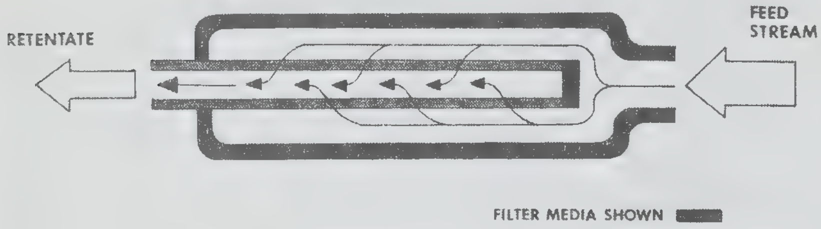
New Equipment

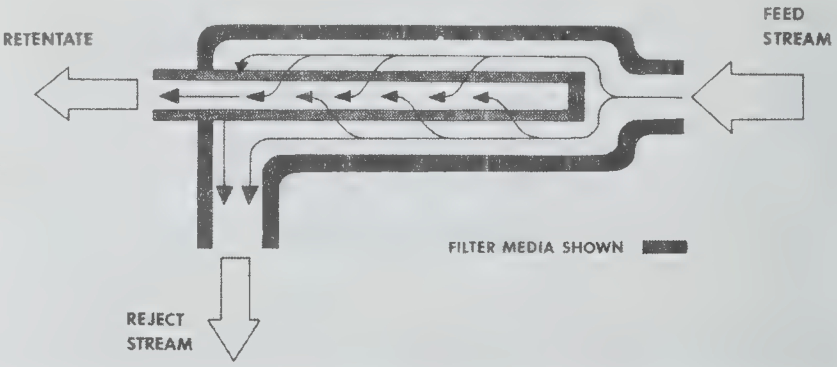
One piece worth note is for the plate and frame type (like the back cover ad) which is a manifold about the thickness of two plates which when installed near the center of the plates converts the filter to a two stage system. The wine put in must go through the first set of pads, is then diverted back up to the inlet side for the second set of pads, then feeds out a port on the side of the manifold. The normal outlet on the head of the filter has been capped to force the flow to the second stage pads. With this device one could filter the wine through a course and then a tighter filtration with only one movement.

Several people have told me, D.E. could not be used with cartridge systems; this in not true. For a couple of years cartridges of polypropolene have been made as a septum for filter aid use, but the thing to point out is with the cylindrical pleated type the surface area is quite small once the pleats are filled with filter aid. This type can be washed and backflushed for full regeneration. People have even used the Cuno type stacked plate type cartridge for D.E. use, but these don't have the space between the plates for cake buildup. Filter aids can be used, though the plate and frame system has the largest cake capacity.

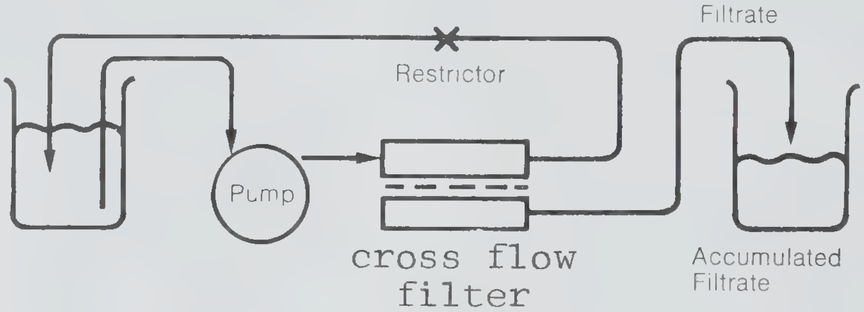
14 Crossflow Filtration

This flow path is new to the wine industry and shows dramatic results when filtering deformable particulates. In crossflow filtration the particulates are continuously swept away from the filter surface by the shear force of the fluid.

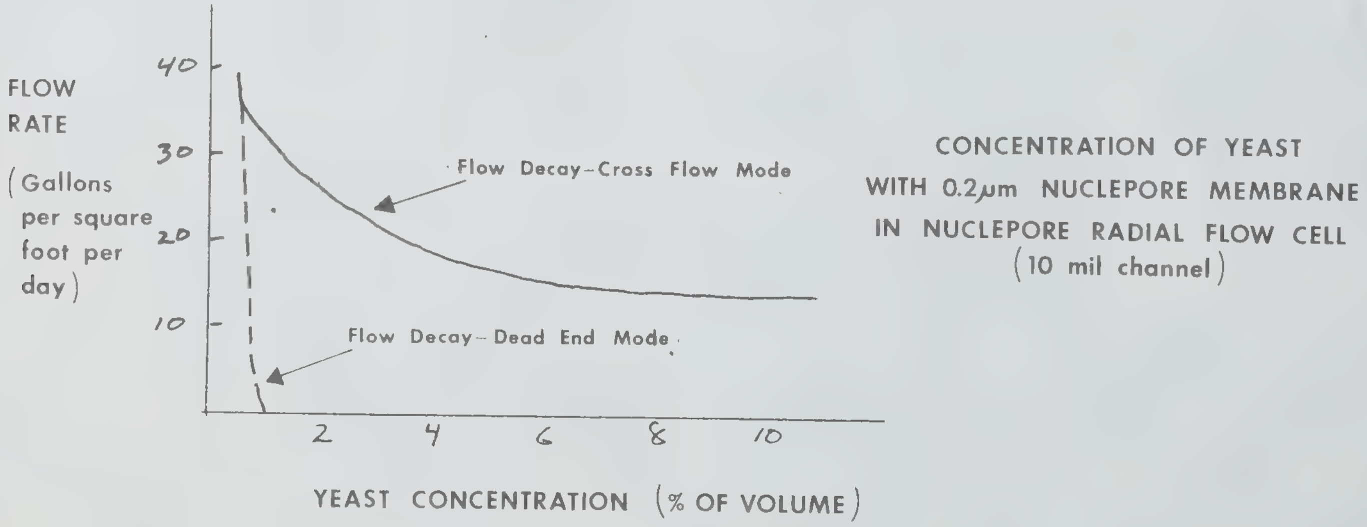




In dead-ended filtration the particulates tend to compact on the filtration medium and plug the filter far more rapidly. In crossflow a percentage of the flow (5% and up depending on the situation) is returned to the input side. This is then refiltered to the desired concentration.



Crossflow filtration is currently being used in other industries for ultrafiltration (less than 0.2 micrometers). The only wine tests I have heard of were for lees filtrations and very satisfactory results were reported.



Another potential application is in water filtration, as any water used in precoating or sterilizing bottling equipment should be filtered tighter than the wine to be bottled. We would be happy to publish information on any tests or applications.

Food grade polyethlene has been around the wine industry for a few years in the form of those 50 gal. blue plastic drums used for concentrate and fruit juice shipping, but now large tanks, up to 6450 gal (and soon 12,000gal) are available.

The natural hesitation to jump toward a plastic tank (even at 50¢ per gal.) is understandable as wine is scrutinized for minor taste components with such diligence; but the last year has seen some commercial trials with the results promising.

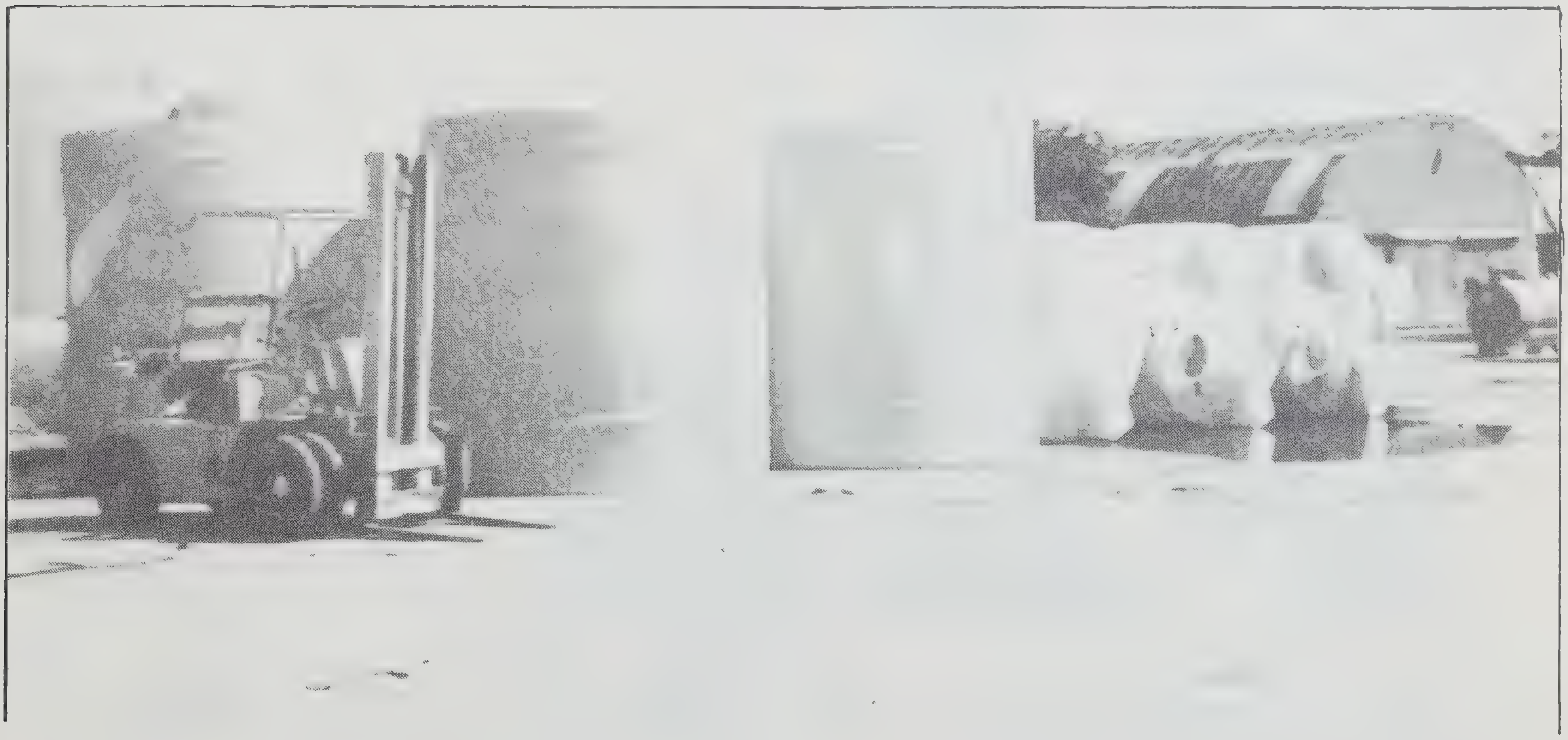
The tanks are being fabricated in Stockton at Poly-Cal Plastics Inc. and are distributed through Process Engineers Inc. of Hayward (as well as several east coast distributors). Their construction is a two layer system with a cross-linked polyethlene exterior (for strength) and a low density food grade polyethlene lining bonded while still tumbling in a large furnace.

The catalyst for the crosslinking in the outer layer is peroxide which is mostly burned off, but a small residue remains, and makes it unacceptable as food grade, but the inner layer has no peroxide added.

The responses of the users was no taste pick up after up to four months residency time (four wineries were queried). One winery even fermented chardonnay in new plastic, but two people noted unusually fast free SO_2 drop which may indicate more oxygen permeability than wood or stainless steel. All users noted the poor sealing of manholes, and a couple noted some of the tanks had raised cavities which were difficult to evacuate and fill with wine.

These complaints (with the exception of the O_2 permeability) are a sign of the youthfull lack of sophistication of the product, and when the sealing capabilities are improved then a better check of O_2 permeability can be made.

All users mentioned the tanks had been moved about since crush pointing up their mobility, and the manufacturer made known how easy it was to put a valve at any point. I might point out the refrigeration potentials are similar to those of wood tanks. All users seemed pleased with the extra cooperage at crush, and indicated they were keeping them for bottling and other temporary storage duties.



Plastic tanks, cast in Stockton, have shown potential for wine storage in a few on the site tests. The black ones (not shown) are better for outside use as the pigment cuts ultraviolet degradation.

THE ROBERT PECOTA WINERY OF THE NAPA VALLEY

"Insulate, Insulate, Insulate," says Robert Pecota. And so he has. The interior of his corrugated steel winery is framed with 2x10"s and is fully insulated to R-32. Located a few miles north of Calistoga they expirence a few days of 100 degree weather, but he says the winery dosen't exceed 65°F using mainly a system of shutters and a small fan which operate automatically when there is a 5°F difference between the interior and exterior temperature.

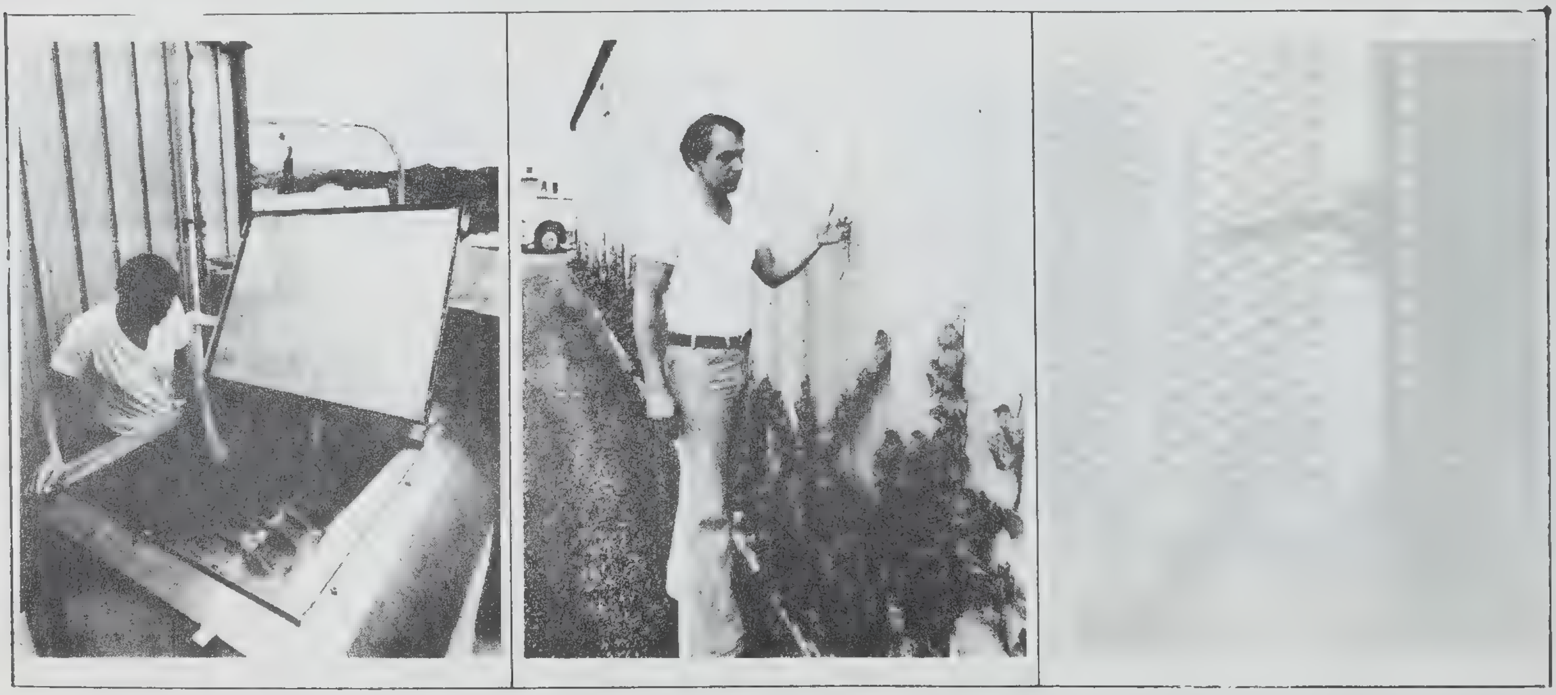
Other energy saving ideas are using drip irrigation line in coils on the roof as a preheater for his hot water heater. He also uses the cooling system of the '50's in which an ice block is formed at night in a an insulated tank. Through coils embeded in the ice circulates the secondary coolant (brine or propolene glycol) for cooling fermenters. This allows the use of a smaller compressor unit, and works it at night with the aid of cooler ambiant temperatures.

He also points out that fluorescent lights use less energy, and three phase power is more economical.

The bottom line of these efforts is a monthly electricity bill of $35 during the year and twice that during crush. Total winery capicity, 17,250.

The Robert Pecota Winery was written up in the PG&E Progress news letter in Feburary for his energy saving ideas, and when I called them for a copy of that article they said anyone could request an inspection of their winery and the inspector would give suggetions on ways to cut industrial power use, all at no charge, That number is 800-792-8000 or check your local directory and tell us if they have any suggestions of value.
They will send you reams of information on solar efficencys and other energy related subjects for the asking.

At a seminar recently the point was brought up that an uninsulated tank uses five times the cooling capacity of an insulated tank.



Left: Ice bank formed at night in the dairy tank allows a smaller cooling unit, less investment and less power demand. Center: Bird netting is used to trellis the ivy on the south side of the winery. Right: The valve is closed and a winery hose is hooked to the "T" for hot water recirculation through the heater using a winery pump, for malo-lactic stimulation.

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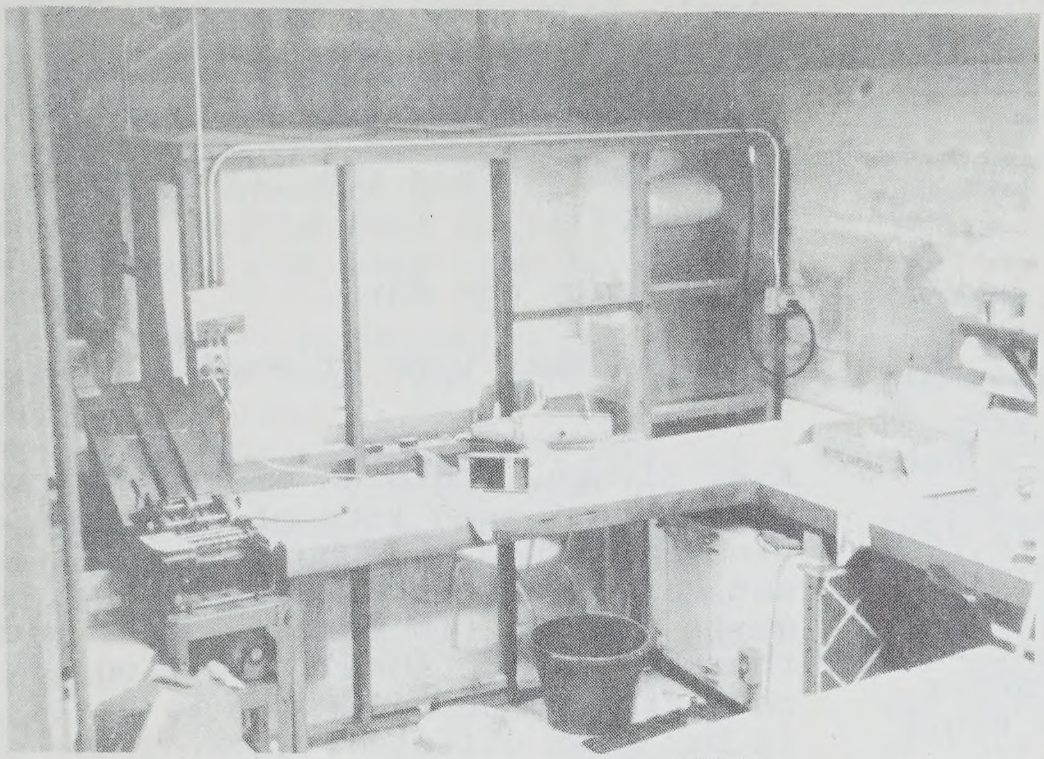
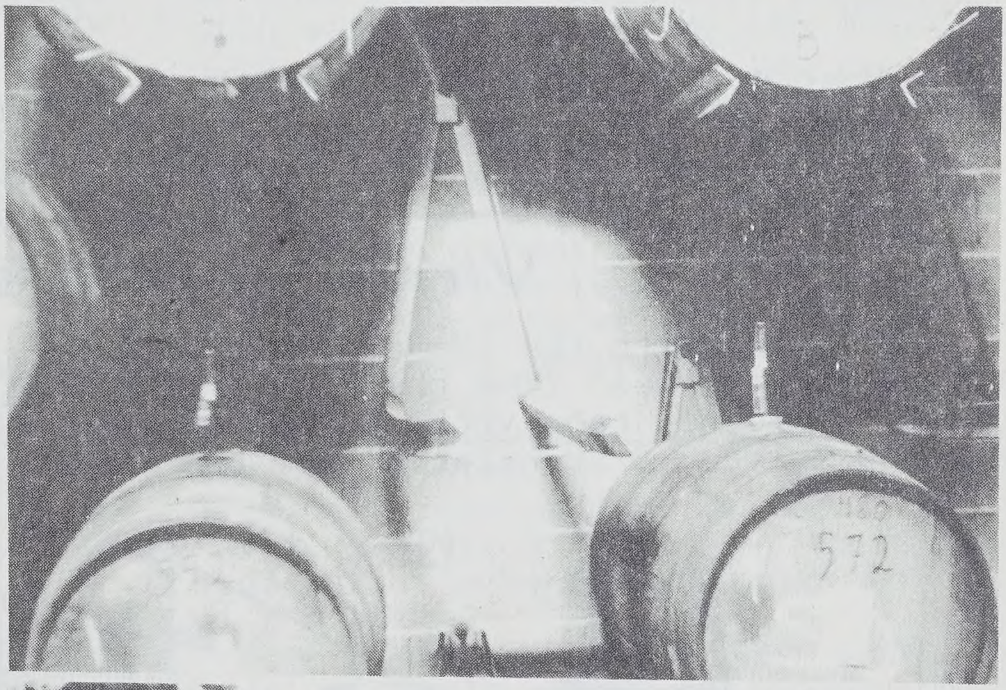
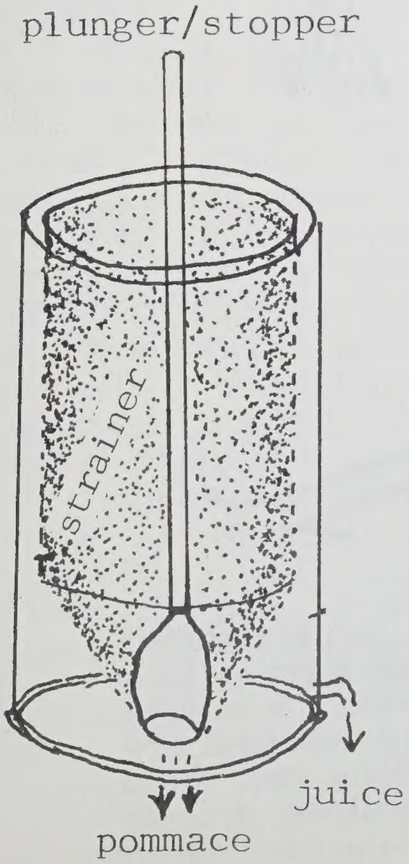
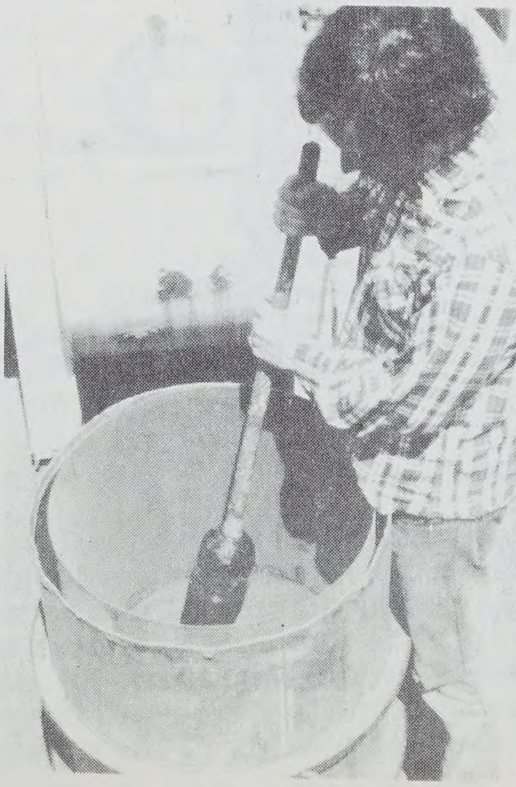


A classic of positive pressure rooms, the filtered air is supplied by the blower under the counter on the rig right. The wood framed, plastic covered room at Felton Empire in the Santa Cruz Mountains, contains the filler and corker, the bottles being passed out a small slit in the plastic to be foiled and labled.



This barrel support used at David Bruce Winery allows individual barrel access. The single bolt supporting the cradle hooks around the reinforcing steel in the wall.





This batch dejuicer made at Veedercrest Vineyards is used for making Blanc des Noir. The converted stainless drum is placed on top of a tank, the plunger/stopper seals around a hole in the bottom and the interior screen is filled with crushed grapes. A percentage of the free run exits through the drain on the side of the drum to a second tank. The plunger is then removed such that the pommace can fall into the lower tank.

Interview with Ken Burnap

continued from page 7

K.B. Oh, I have on some wines. Some wines, after they go through M-L, I feel it may be advantageous to put on about 35 ppm.

P.W. Is this from a practice you know to be used in Burgundy?

K.B. Not by todays standards, but this is how they made Burgundies about 150 years ago. Basically what I do is just kind of a giant step backwards in progress. Now, I'm not trying to make a Burgundy, it just so happens that my '76 Pinot is very much like a Burgundy, but generally there are two differences between Burgundies and California Pinot Noirs- one is an elusive floral character to the nose, and the other is ethyl acetate.

P.W. What do you think is the origin of the latter?

K.B. Several reasons; not using cultured yeast, a comparatively long skin soak, another is a comparatively long time on the gross lees. In the old style they don't press till all the skins drop to the bottom of the tank.

P.W. How long was the '77 on the skins for ?

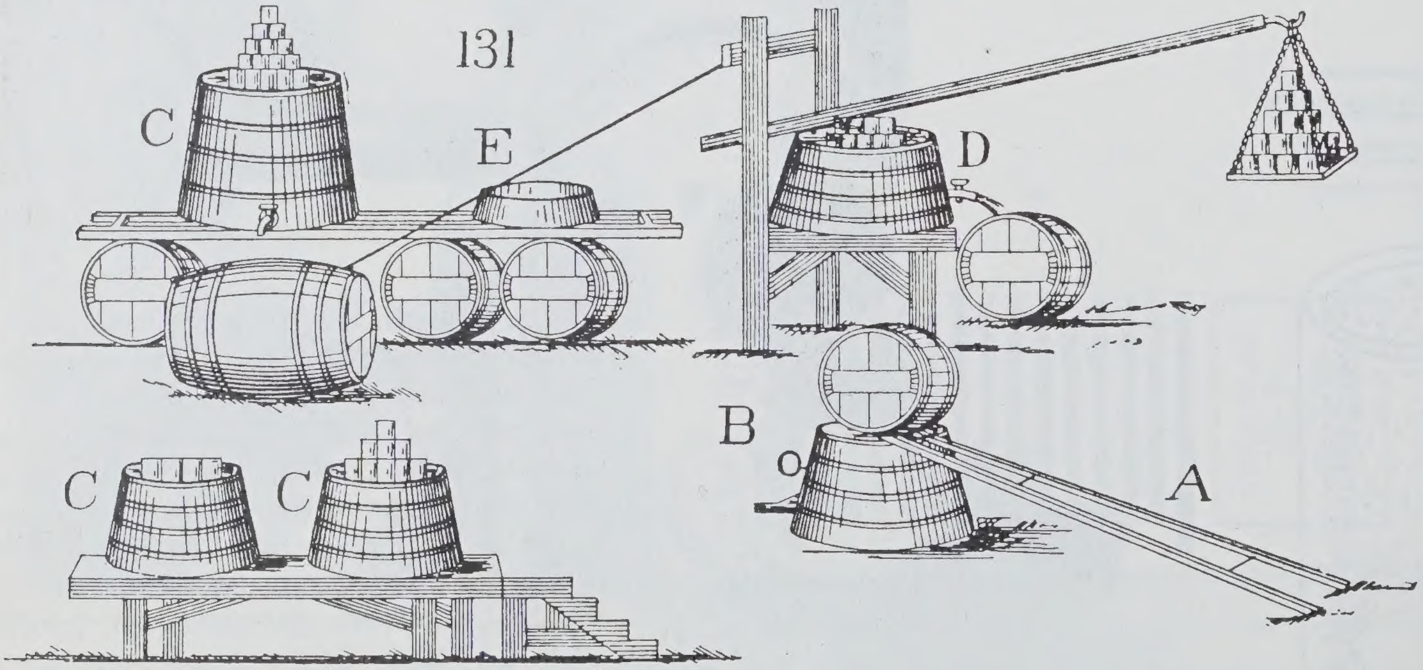
K.B. Twenty one days.

P.W. And what type of wood did it see.

K.B. Siruge, I did an experiment in '75 where I aged lots of the same wine in Siruge and Prarie du Chêne and have done comparison tasting maybe a dozen times since then, and there is no conclusive decision; each time we decide which is best it has gone different ways, even with the same people. The thing that pisses me off is that when it comes time to order new wood it is always the French oak that wins, when you'd rather pay for American oak.

Vintage Ideas

In keeping with the theme of filtration I present the origin of the term "filter press" from the Annual Report of the Cheif Executive Officer of the Board of State Viticultural Commissioners for the year 1888, by Raimond Boireau. Translated from the French by E.A.Schneider. Page 108.



131. Filter presses; *a*, bridge used for emptying the first lees in the tub *b*; in *c* is a utensil hooked to the pail—a kind of tin basin with double bottom of rectangular form—which possesses one or several iron rings which have the diameters of the sacks; *c*, *c*, *c*, these are small vats, which have an inner diameter of three and one third feet, and are about two to two and one half feet high; the first one contains about ninety gallons, and those which are two and one half feet high contain about one hundred and forty gallons; *d*, press for the lees with long lever; *e*, pail which is used for putting in the sacks, or to press them.

Vintage Ideas Cont.

"Pressing The Lees.-After having drawn the wine from the lees three or four times, it is possible by pressing to recover a still further quantity, as the lees contain, on the average, not less than 50% of liquid.

Economical Arrangement of a Press for the Lees.-The pressing of the lees is done in small sacks, which are approximately one and one half feet long. The material of these sacks should be cotton cloth, because the sacks, which are made from hemp, impart to the wine (even if they have been used several times) a disagreeable taste: this sack taste is very injurious to the quality of the wine. Cotton, which does not impart any bad taste, should always be chosen.

The lees from one vineyard, or from one cellar, can be pressed without any other expenses than the purchase of a sufficient number of sacks. The cloth should be fine, and have regular and tight meshes.

In order to arrange a cheap press for the lees, an empty barrel is taken and its bottom staved in; this bottom is now fastened together by two crossbeams; when this is done a little less than half an inch of wood is taken off from the periphery of the bottom, so that it will easily go into the barrel and thus answer for a cover. Afterwards, in one of the staves of the barrel, a gimlet hole is bored about half an inch above the bottom which remains, in a manner that this hole just touches the bottom in the interior of the barrel. Lastly a stopcock is introduced in the gimlet hole. This barrel, which is designed to hold the sacks, is now placed alongside a wall on two barrels, which are covered with a board; if necessary, the barrel is raised to a sufficient height so that below the stopcock an empty barrel, destined to receive the pressed wine, can be placed.

In order to empty the lees in the sacks rapidly and easily, the full barrels are raised on a scaffolding and emptied in the sacks. During this operation the sacks are held open by means of a piece of twisted wood; as soon as a sack is full it is solidly tied up with a knot easy to undo again. In this way one sack after another is filled into the barrel until full.

During all this time the stopcock remains open and the wine runs off in proportion as it is filtered into the empty barrel which has been previously rinsed and sulphured.

When the barrel is filled with the sacks the cover is placed on top of them and very gradually charged with weights; afterwards the pressure is continued with a lever. The pressing of the lees should be carried on very gradually; thus the lever should be used only after the sacks have been drained during several hours without the application of pressure; the lever should be also charged with weights after several hours; better still on the following day.

When there is no more liquid in the bags, which may be recognized when, notwithstanding the use of the lever, no more wine drops from the stopcock, the sacks are taken out of the barrel.

This simple arrangement, which does not imply any other outlay but the purchase of sacks, is sufficient for the small winemaker who wants to utilize the lees of his wines without incurring unnecessary expenses."

Next Issue

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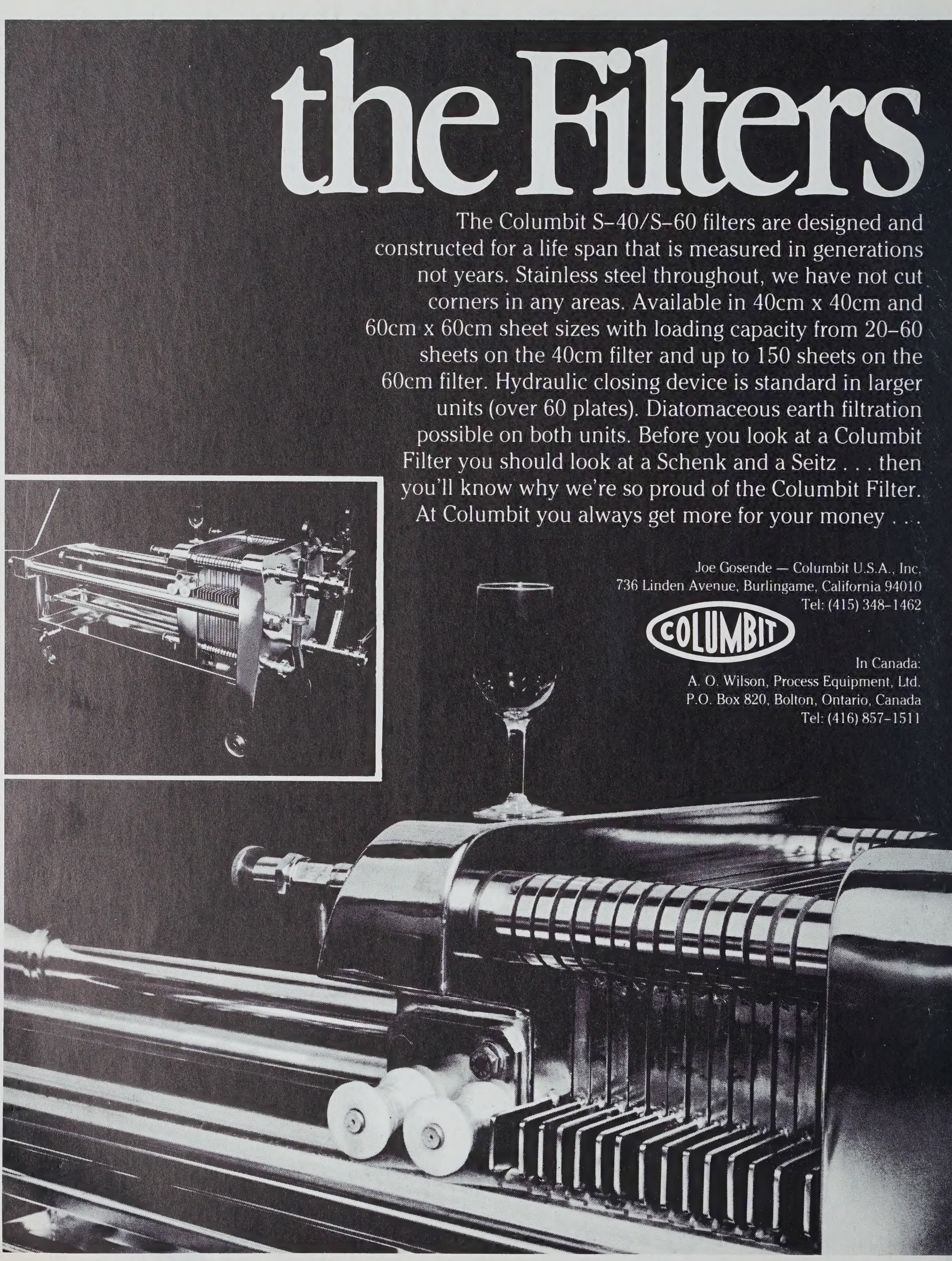

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